

Co: Rico



1866792 - R8 SDMS

RICO PROJECT

BLAINE MINE SILVER EXPLORATION PROGRAM

April 23, 1982

by:

James Bielak

Larry Barrett

Douglas Silver

CONTENTS

List of Figures

Conclusions and Recommendations

Introduction

Geology

Proposed Drilling Program

Drilling Cost Summary

District Exploration Potential

Blaine Mine

Phoenix-Yellow Jacket Area

Newman Hill

CHC Hill

List of Figures

Figure 1 - Location of existing and proposed drill holes

Figure 2 - Blaine level geologic interpretation

Figure 3 - 200 level geologic interpretation

Figure 4 - 300 level geologic interpretation

Figure 5 - Section A-A', showing C-30 and SC-4

Figure 6 - Section B-B', showing C-25 and C-29

Figure 7 - Rico District schematic stratigraphic section

Figure 8 - DDH SC-5 geologic column

Figure 9 - 200 level geologic map near SC-5 intercept

Middle Hermosa replacement deposits in the Blaine Mine are highly dependent on structures which permitted ore solutions access to the reactive limestone beds. Faults which acted as mineralizing conduits include the Blackhawk, 210 Drift, 112 Drift, Honduras, and a reverse fault exposed underground near the Nellie Bly Fault (see Figures 2, 3, 4). Typically, mineralization which centered on any individual structure extends a maximum of 80 feet into the limestones on either side of the fault. The volume of mineralized ground was locally amplified by numerous small-scale structures, including bedding plane faults. A large stope in the Blaine Mine may measure 200 feet downdip, 200 feet along strike, and be of variable thickness. The "O-Bar-Two" stope, one of the larger individual deposits in the Blaine, contained approximately 50,000 tons of ore.

Four diamond drill holes, C-25, 29, 30 and SC-4, were drilled from the surface in the Blaine area, exploring for a deep molybdenum porphyry target. They penetrated several Middle Hermosa limestone horizons, and intercepted replacement mineralization summarized in Table 1.

The ore occurs in sharply defined zones, 5-25 feet thick, within limestone beds. Massive sulfide comprises the bulk (80-90%) of the intercept, gangue the remainder. The sulfide zone is a mosaic of 2-4 mm pyrite cubes, with stringers and layers of galena and yellow to red-brown sphalerite. The layers crosscut the pyrite zone, and may extend as veins into adjacent wallrock.

Several areas in the district offer potential for replacement deposits. Deep diamond drilling near the Blaine Mine resulted in attractive, shallow sulfide intercepts, summarized in Table 1 below. As a consequence, this proposed drilling exploration program will concentrate on delineating replacement deposits in the Blaine area. Successful delineation of these deposits will encourage additional exploration and drilling in other parts of the district.

TABLE 1
BLAINE MINE AREA SULFIDE INTERCEPTS

<u>DDH</u>	<u>FOOTAGE</u>	<u>INTERVAL</u>	<u>OPT AG</u>	<u>% Pb</u>	<u>% Zn</u>	<u>% Cu</u>
C-25	615-630	15'	1.07	3.23	6.63	0.03
C-29	277-302	25'	3.79	8.00	6.70	0.05
C-30	420-425	5'	0.59			
SC-4	496-506	10'	8.67	0.07	0.15	0.05

Geology

Ten limestone beds in the Pennsylvanian Middle Hermosa Formation produced the majority of ore mined at Rico. Their presence in the district is highly continuous, and they are named A through L from the base of the formation upwards. Beds C, E, H, I, J and K hosted the greatest proportion of mineralization.

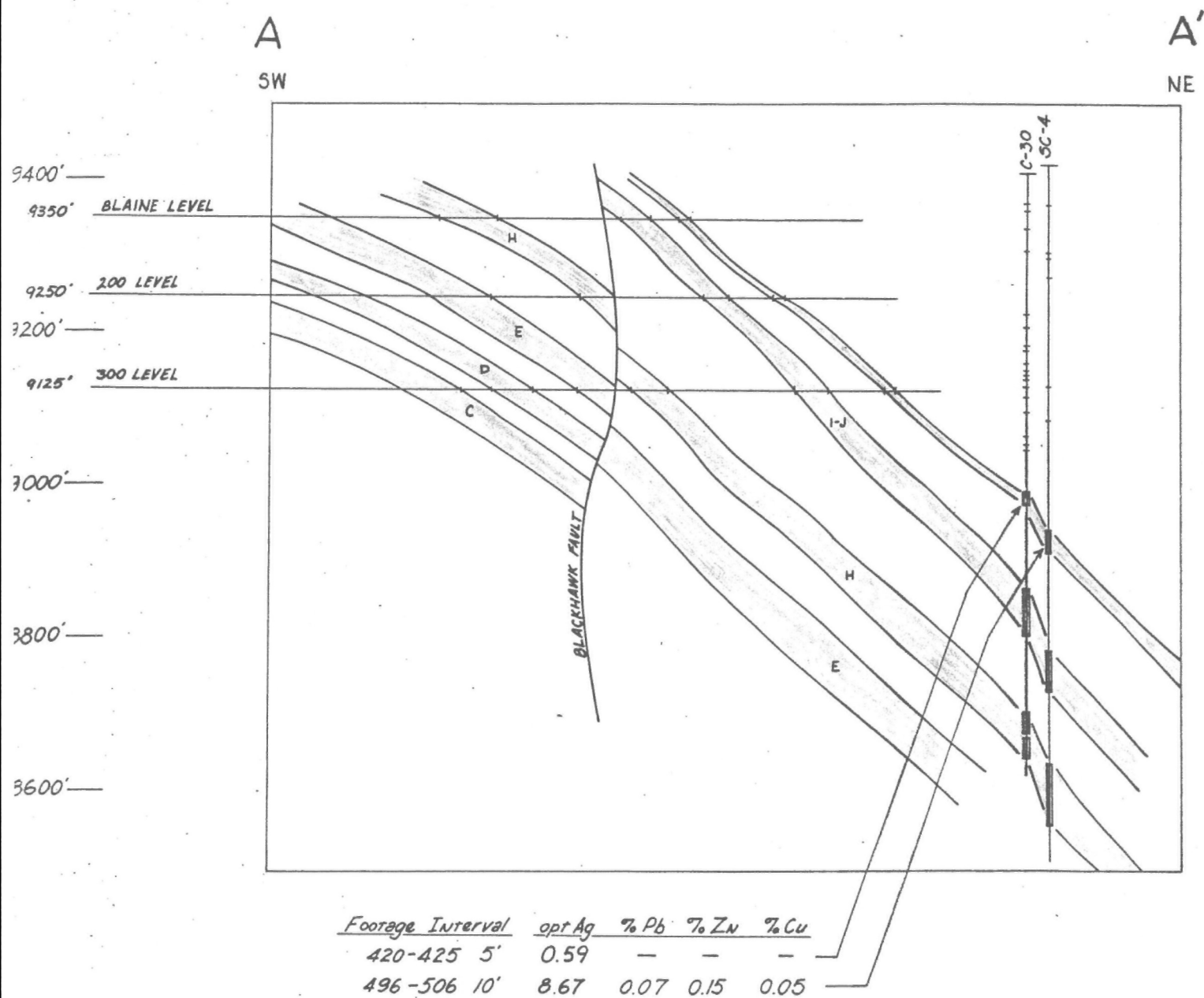
The ore generally consists of 75-80% pyrite, 5-25% galena plus sphalerite, and trace chalcopyrite. Pyrrhotite and magnetite are accessories. Silver (1-8 opt) is generally an important component of the ore.

Late-stage ~~while~~ calcite ± sulfide veins up to several inches wide crosscut the sulfide zone. The wider veins contain solution cavities filled with calcite spars. Gangue mineralogy includes calcite, chlorite, epidote, actinolite, and magnetite/specularite in variable proportions. These products, together with pyrite, are common alteration products 6 to 12 inches from the ore zone.

Simplified interpretations of level plan geology are shown on Figures 2, 3, and 4. Cross sections (Figures 5, 6) show a very uniform 30-45° northeast dip of Middle Hermosa stratigraphy in structurally coherent blocks.

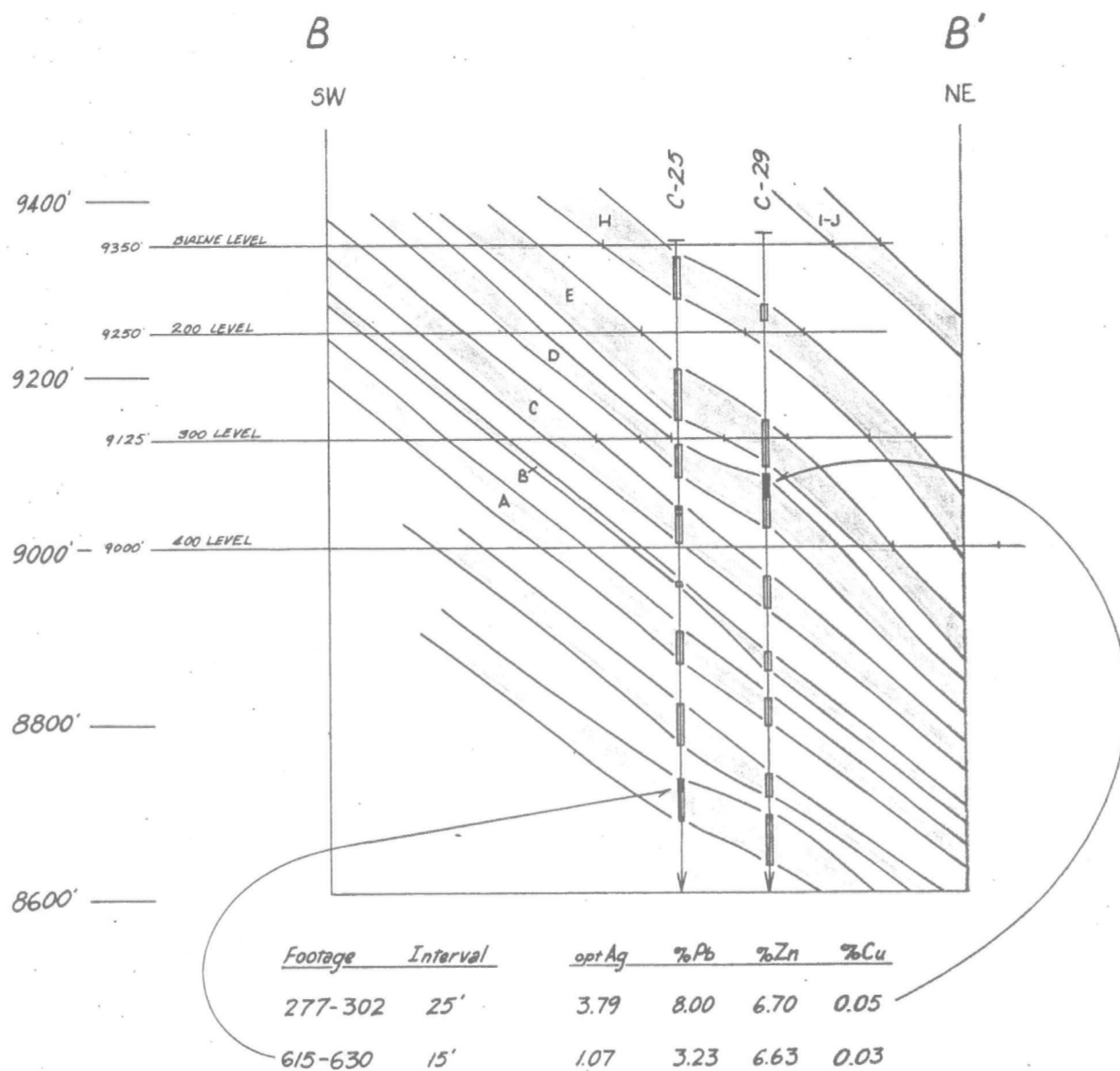
Mineralization in C-30 and SC-4 replaces the K-bed limestone. The two K-bed intercepts lie near the projected intersection of the 112 drift and reverse faults.

C-29 intercepted massive replacement in the D-bed, and C-25 penetrated sulfides in limestone of the upper part of the Lower Hermosa. These intercepts lie on an apparent trend of mineralization originating near the Argentine shaft and extending west. The K-bed and "Argentine trend" present two encouraging targets to explore with 1982 drilling.



Scale 1" = 200'

Figure 5.



Scale 1" = 200

Figure 6.

Proposed Drilling Program

K-bed mineralization near C-30 and SC-4 would best be tested by a 900 foot hole (proposed hole B, Figure 1) positioned 200 feet ENE of SC-4. This will explore for replacement mineralization centering on the projected intersection of the 112 drift and reverse faults. Both are known to contribute to mineralization where they are exposed underground.

A successful 10 foot mineralized intercept of the K-bed at this location would yield an ore body of approximately 15,000 tons grading +8 opt Ag. Further delineation drilling may expand it to 50,000 tons or more. Mineralization is also expected in stratigraphically lower limestone beds.

The mineralization in C-29 and C-25 lies along an apparent trend originating near the Argentine shaft on the 400 and 500 levels. This trend of replacement affects the E, H, I, J, and K beds which were exploited by the lower Blaine levels. An 800 foot hole (Hole A, Figure 1) drilled 150 feet east of C-29 would test all limestones from the I + J down, including those in the upper part of the Lower Hermosa. A successful 25 foot mineralized intercept in the D-bed at this location, together with the C-29 intercept would delineate an orebody of approximately 50,000 tons averaging 2.4 opt Ag and 14% combined Pb + Zn. Mineralization is also expected in other limestone beds.

Barring unforeseen difficulties or expenses, sufficient budget would remain after these initial holes to drill up to two additional holes (C and D, Figure 1). If holes A and B are successful, C and D may be used to further delineate mineralization in the two deposits. Alternatively, one or both of the second two holes may test other areas of the Blaine workings, e.g. near SC-5 (Hole E, Figure 1).

Drilling Cost Summary

Boyles Brothers Drilling Company has offered to drill the proposed short holes using 1981 footage prices, and no charge for mobilization. Drilling Services estimates an overall average cost of \$24 per foot, which includes mud and supplies. Plans call for a Longyear 44 rig to drill NC core to the terminal depth, if feasible.

Using a \$24 per foot average estimated cost, holes A (900') and B (800') will total approximately \$40,800. The two remaining holes (C, D, or E) will cost a similar amount. To help keep assay costs minimal, only mineralized intercepts will be analyzed (Au, Ag, Cu, Pb, Zn).

District Exploration Potential

The Rico mining district produced over 8 million ounces of silver and significant lead, zinc, and copper during a ninety year period.

Rico District Production Summary 1894-1971

Ag - 8,089,116 ounces

Au - 28,755 ounces

Pb - 180 million pounds

Cu - 4.71 million pounds

Zn - approximately equals Pb; not recovered

Ore occurred in veins and replacement deposits at discrete stratigraphic levels. Silver values typically ranged between 5 and 100 ounces per ton. Depressed market prices halted serious exploration in the 1940's.

Figure 7 displays a generalized stratigraphic column of the district, and includes formerly exploited mineral horizons with typical metal values. Replacement deposits are found in the Leadville Limestone, Lower Hermosa, and Middle Hermosa carbonates. An increased understanding of mineralization controls in the district will produce exploration models for additional replacement deposits in permissive areas.

Blaine Mine

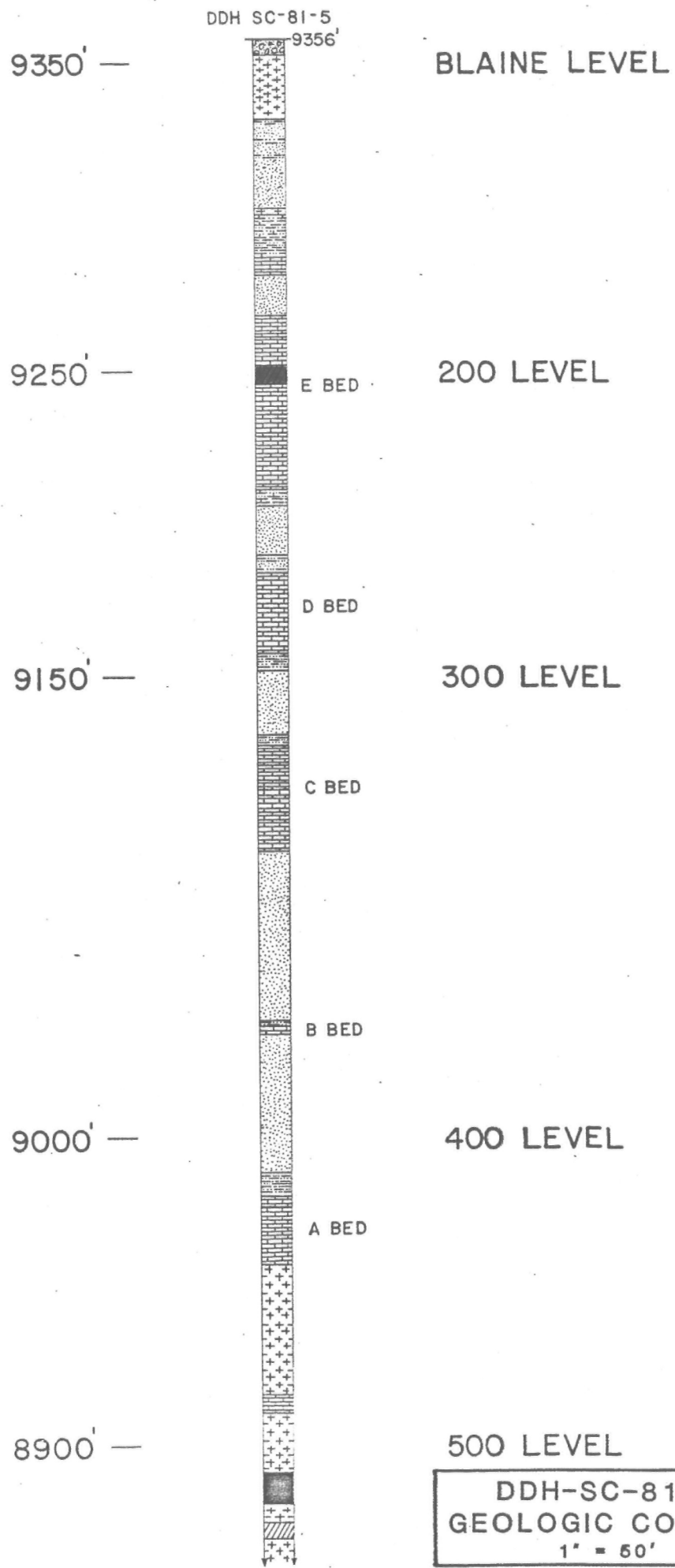
The four proposed holes A-D will test only two target zones in this area. Additional targets are undoubtedly present and within reach of the current underground mine system.

One area in particular is near SC-5. This hole drilled seven feet of massive sulfides in the E-bed, between 98-105 feet (Figure 8). This interval assayed 1.91 opt Ag and 34.15% combined Pb + Zn. The mineralized intercept occurs approximately 50 feet from an accessible underground drift on the 200 level (Figure 9). Drill hole E is an alternate proposed hole to test an area 100 feet northwest of SC-5. Winkie drilling from the Blaine level is considered to be the best method to test the extent of this replacement. *not shown*

Another area of interest is near the Bertha S. Adit (exposed pebble dike/quartz eye porphyry outcrop), located roughly 1,800 feet east of the Blain portal. An NC hole in this area would test Middle Hermosa limestones for replacement, evidence for which exists on the local mine dumps. This site is also attractive in that the hole could be continued to test for an eastward continuation of molybdenite mineralization at depth.

Phoenix-Yellow Jacket Area

Several small mines exploited vein and replacement deposits in this area, located above the east extension of the NBH zone. Shallow drilling could easily test for additional Middle Hermosa replacements, and deeper holes are recommended for testing an eastward continuation of the NBH zone--a replacement deposit in the underlying Leadville Limestone. A geologic study of the Phoenix-Yellow Jacket group of mines is in progress.



DDH-SC-81-5
GEOLOGIC COLUMN
1" = 50'

Figure 8

200 LEVEL

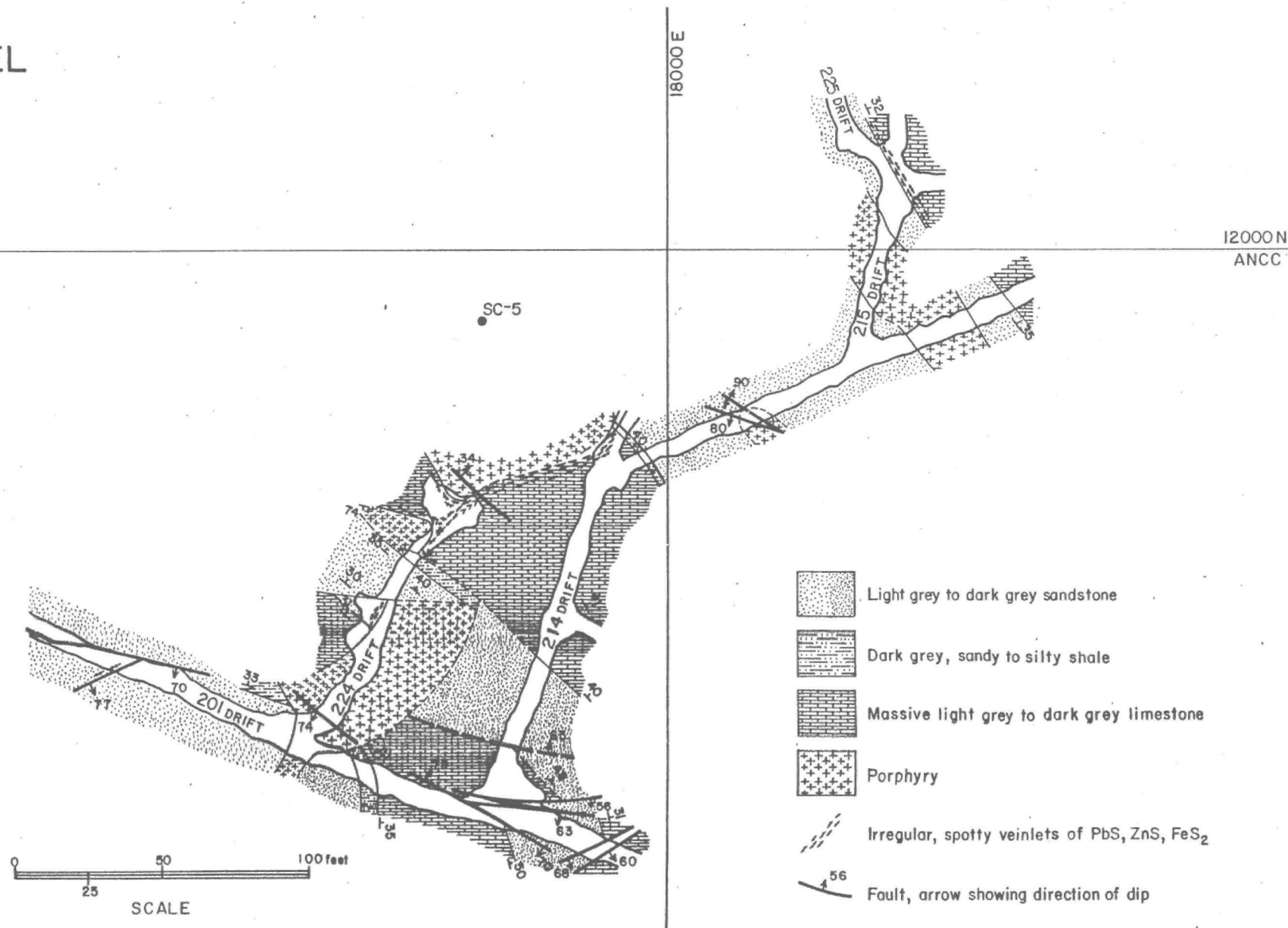


Figure 9.

Newman Hill

Holes drilled on Newman Hill during 1980-81 tested for replacement mineralization in the Leadville Limestone. They intercepted alteration and specularite replacement in limestones and rubble breccia, suggesting the existence of a base-precious metal deposit nearby. Replacement deposits were also exploited in the Forest-Payroll mine. Potential for high grade mineralization is considered good, and further exploration is recommended once controls on mineralized trends are better understood.

CHC Hill

Several mines worked replacement deposits in Middle Hermosa carbonates on CHC Hill. These are related to the Blackhawk Fault, which acted as a conduit for hydrothermal solutions. The deposits were principally massive pyrite (up to 99%) with minor galena and sphalerite.

It is suspected that a separate porphyry molybdenum system underlies CHC Hill, and that the pyrite replacement bodies are peripheral to this system. Lead-zinc-silver replacements may occur at depth, closer to the center of this system.

in the Blaine Mine (hole E, Figure 1) to test for continuity of mineralization intercepted by SC-5, which grades 1.91 opt Ag and 34.15% combined Pb plus Zn. Winkie drilling from the Blaine level is considered the best method to test this mineral deposit.

4) Other targets are recognized in the Newman Hill, CHC Hill and Phoenix-Yellow Jacket areas, but they do not have the readily accessible potential of those in the Blaine area.

Introduction

A facet of Anaconda's current exploration strategy is to discover high grade mineral deposits which may be exploited at low cost. The following features make the Rico District attractive for this type of exploration program:

1) District-wide replacement mineralization. Deposits mined between 1894-1971 produced significant Ag, Au, Pb, Cu, and Zn. Recent drill hole intercepts show potential for additional replacement deposits particularly rich in Ag.

2) Extensive underground workings in the areas of interest would permit access for detailed exploration and low-cost development.

3) Presently on site are facilities which, with rehabilitation, would permit milling and concentration of ore at a rate of approximately 500 tons per day.

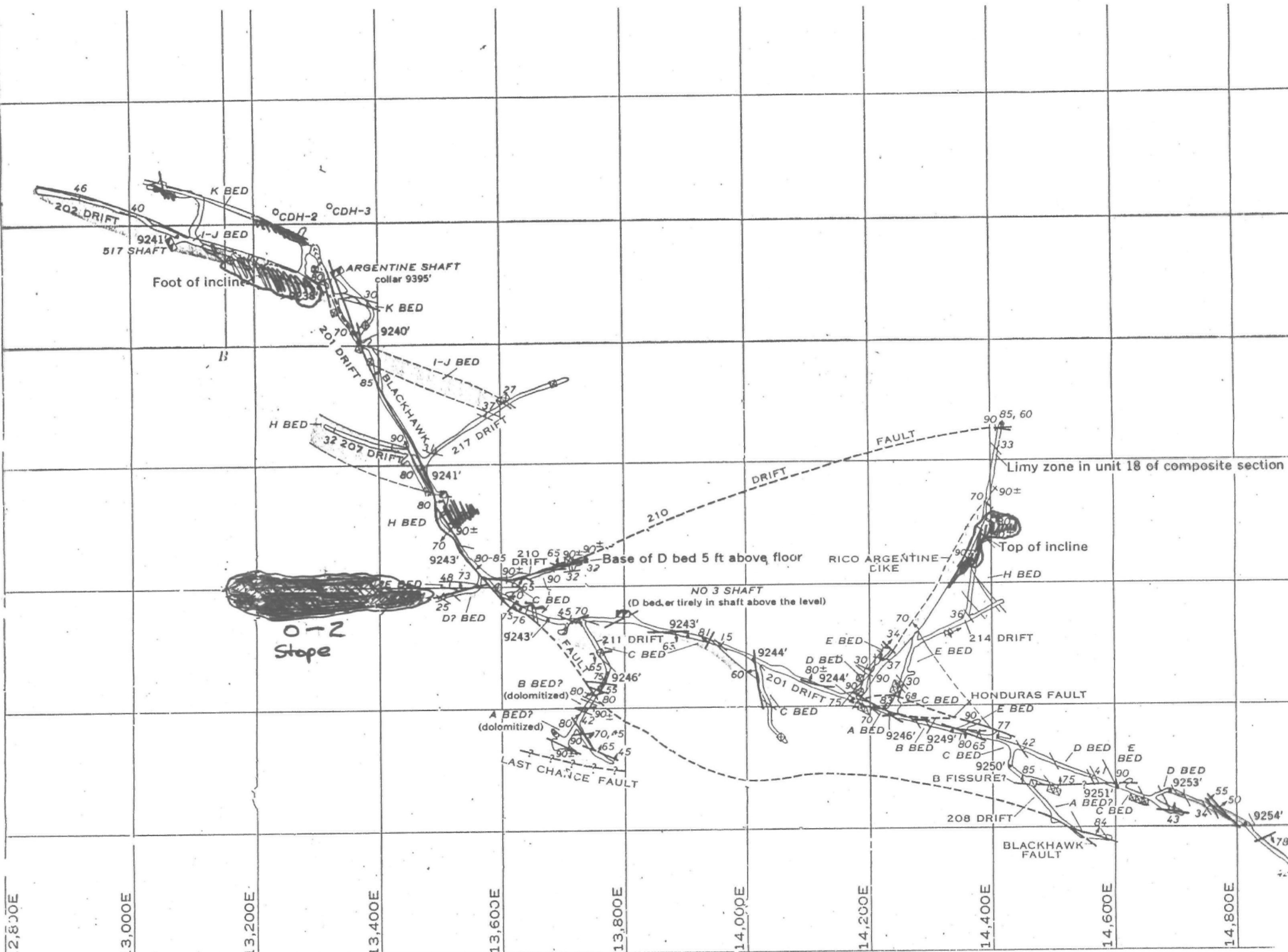
Conclusions and Recommendations

Middle Hermosa Formation limestones in the Blaine Mine area offer excellent potential for silver-base metal deposits. The extensive underground workings in the area would permit immediate access for mining the deposits. Furthermore, facilities are present on site for milling and concentration of ore. An exploration program involving about 3,500 feet of Nc core drilling is outlined below.

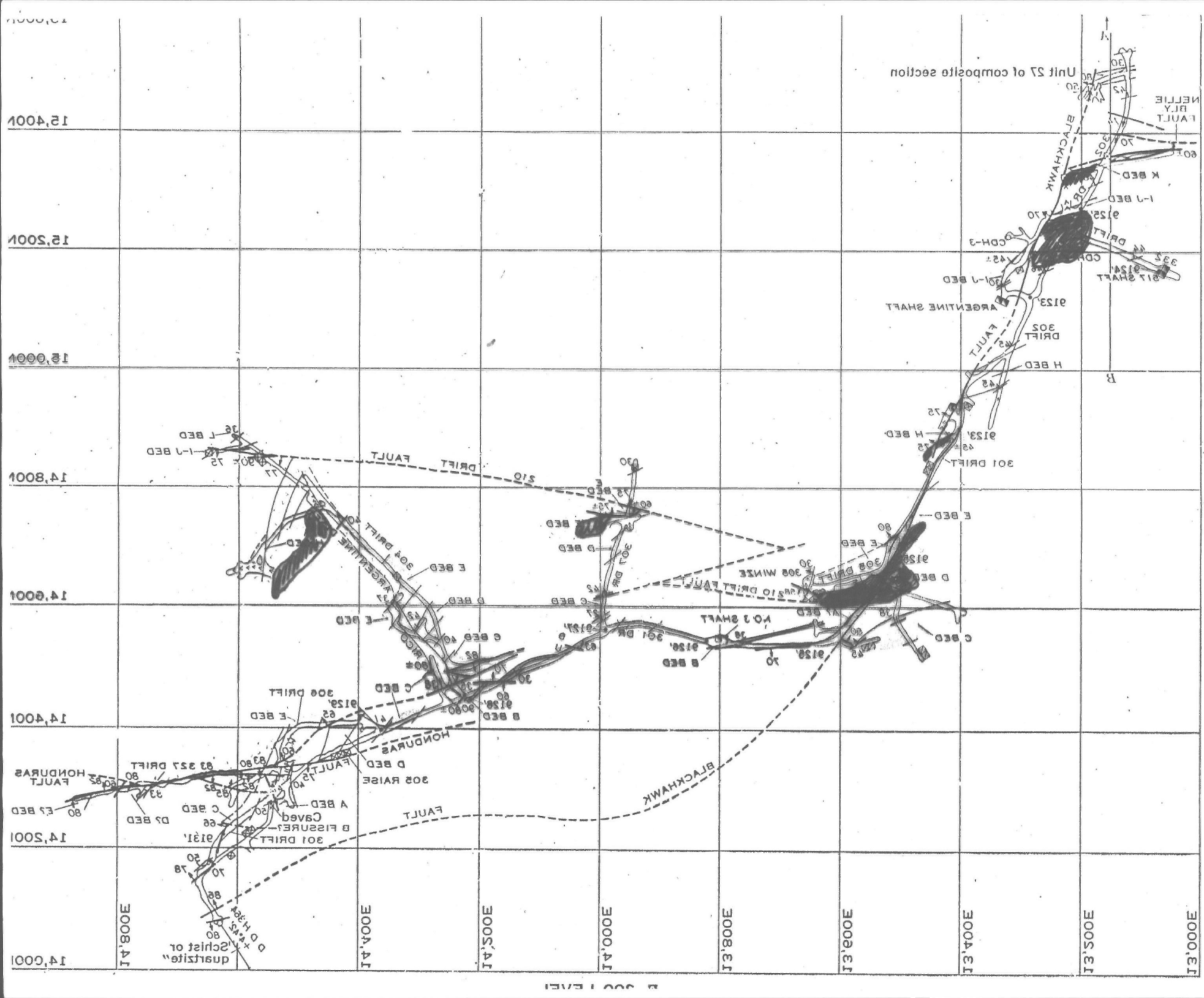
1) Previous drill hole C-29 intercepted 25 feet of replacement mineralization grading 3.79 opt Ag and nearly 15% combined Pb plus Zn. A surface drill hole (A, Figure 1) 800 feet deep will test for extension of this mineralization 150 feet east of C-29. A 25 foot intercept of ore grade mineralization will indicate a deposit of about 50,000 tons.

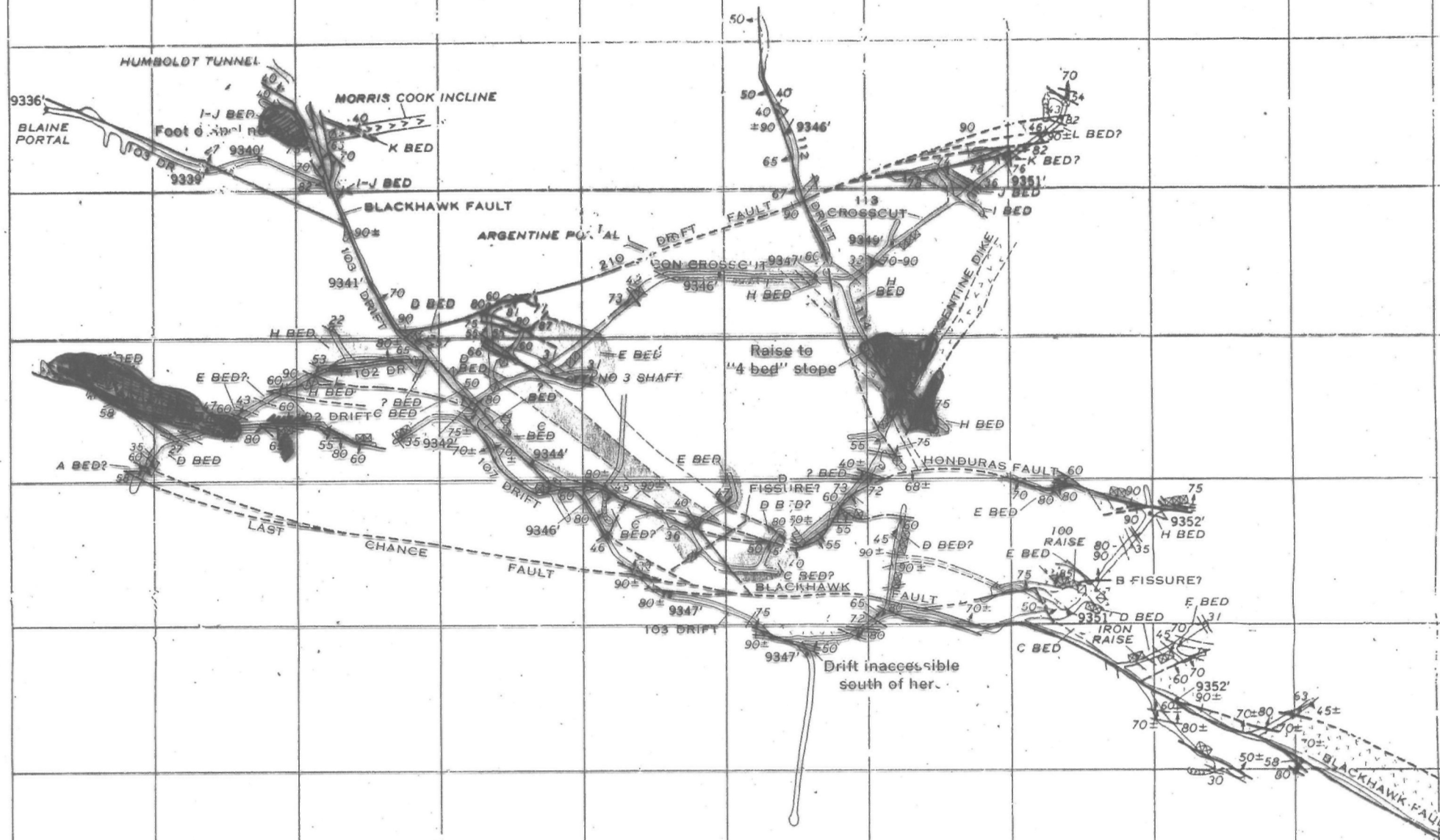
2) Previous drill hole SC-4 intercepted 10 feet of replacement sulfides which assay 8.67 opt Ag. A surface drill hole (B, Figure 1) 900 feet deep would test for an extension of this mineralization and for other mineralized beds in the Middle Hermosa. A successful intercept (+10 feet) will indicate approximately 15,000 tons of ore.

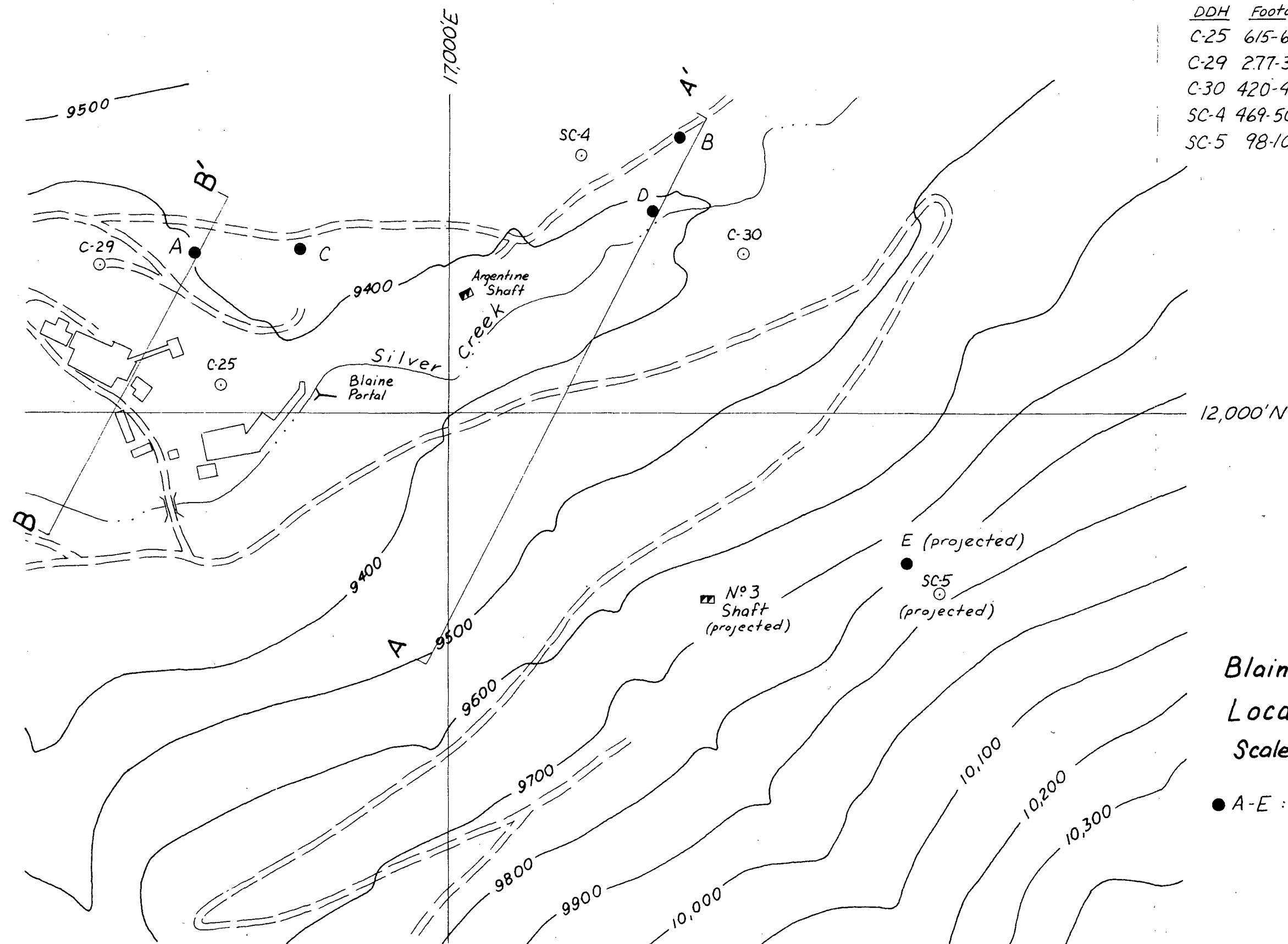
3) If the first two holes are successful, holes C and D (Figure 1) will be drilled to comparable depths to expand the deposits. If either A or B are unsuccessful, an alternative site is located



D. 200 LEVEL





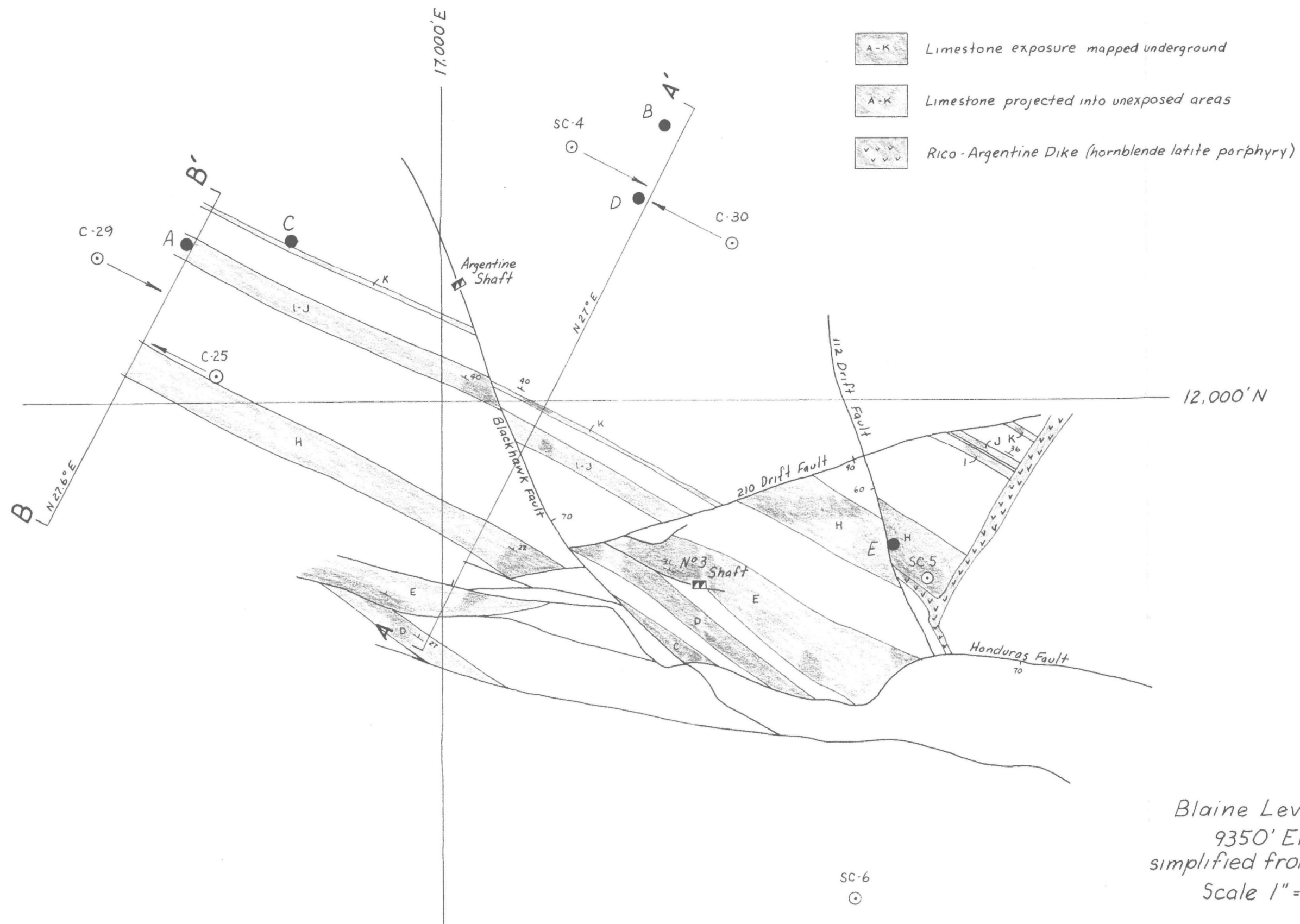


DDH	Footage	OPTAg	%Pb	%Zn
C-25	615-630	1.07	3.23	6.63
C-29	277-302	3.79	8.00	6.70
C-30	420-425	0.59		
SC-4	469-506	8.67	0.07	0.15
SC-5	98-105	1.91	19.3	14.9

Blaine Mine Area
 Location Map
 Scale: 1"=200'

● A-E : Proposed Drill Holes

Figure 1.



Blaine Level Geology
 9350' Elevation
 simplified from McKnight, 1974
 Scale 1" = 200'

Figure 2.

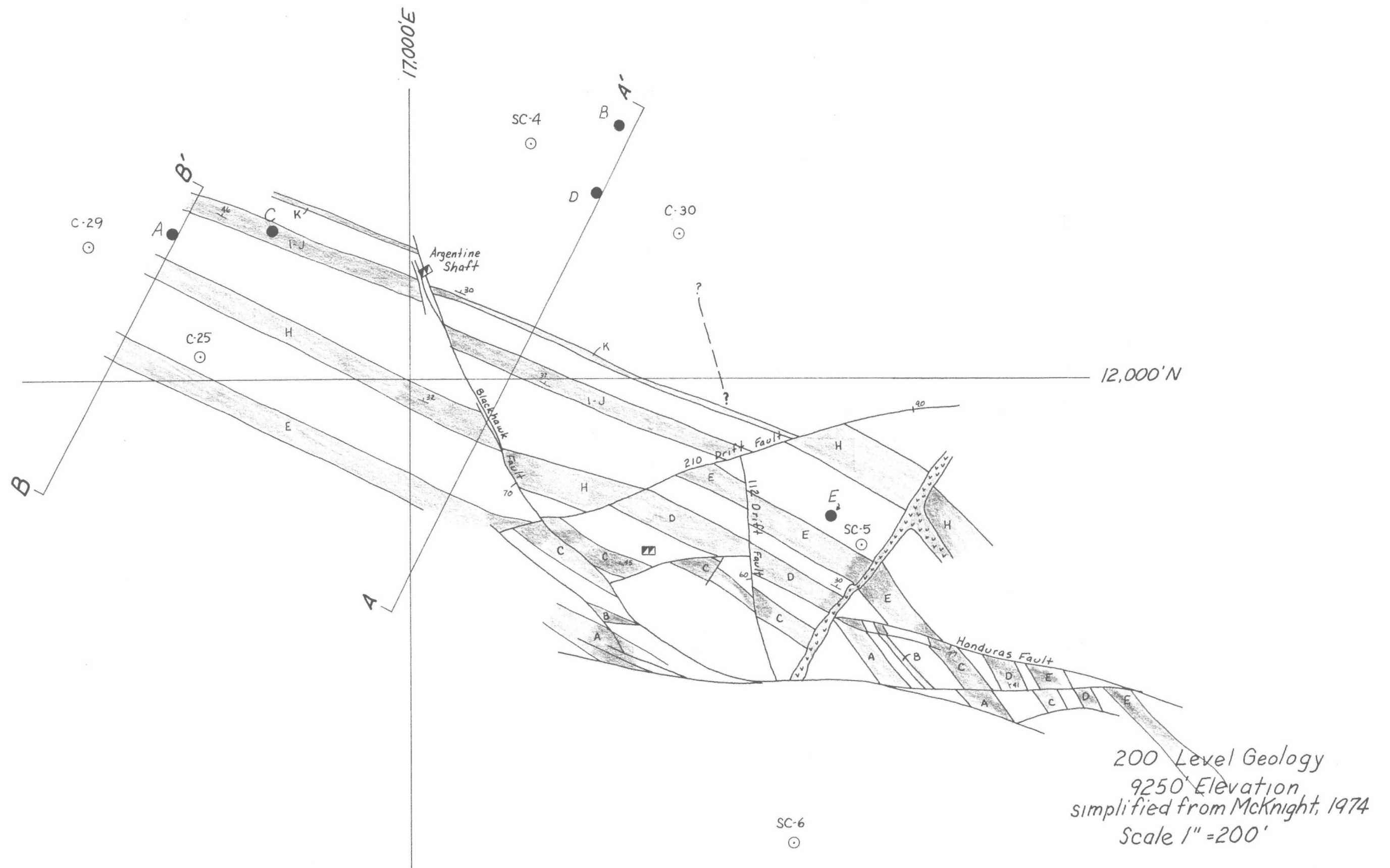
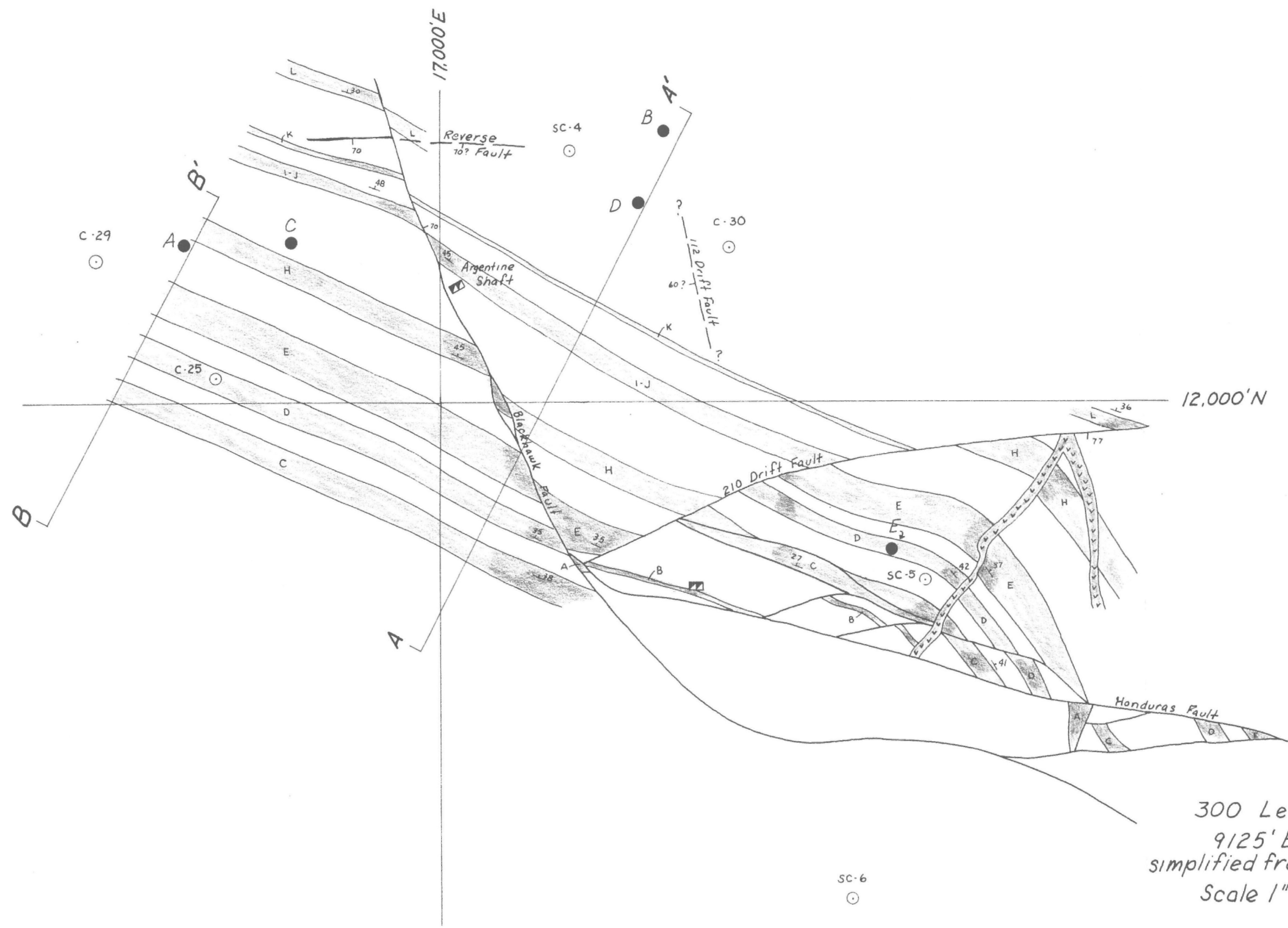


Figure 3.



300 Level Geology
 9125' Elevation
 simplified from McKnight, 1974
 Scale 1" = 200'

Figure 4.